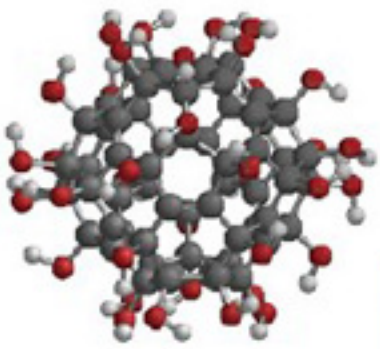
多羟基富勒烯C60、C70的测定

Evaluation of Transparent Electroconductive Paints Distribute MWNT

采用SPM和IG法测定多羟基富勒烯C60、 C70。
富勒烯C70具有由70个碳原子组成的橄榄球形结构。
IG法测定粒径，通过衍射光的衰减曲线拟合成理论公式进行计算。

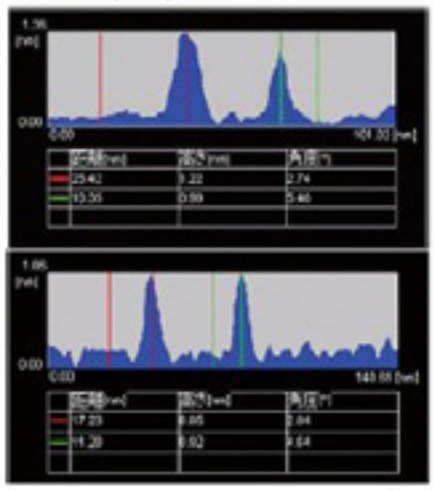
This shows example of measurement of Polyhydroxylated Fullerene C_{60} and C_{70} using SPM and IG method. Fullerene C_{70} has a structure with seventy carbon atomics puff of rugby ball shape.
The particle diameter is calculated by fitting decay curve of diffraction light to theoretical formula in IG method.

多羟基富勒烯C60／PolyhydroxylatedFullerene C_{60}

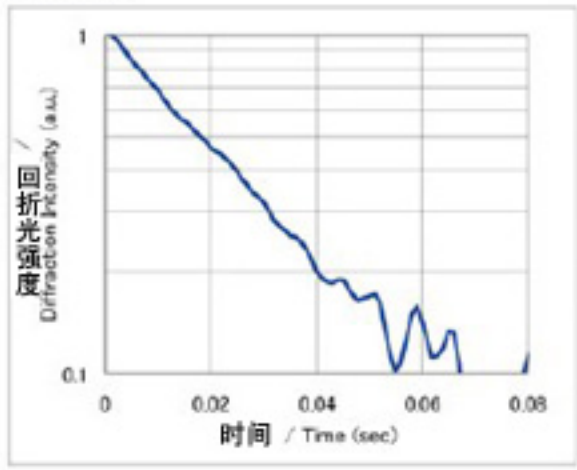


黑 C
白 H
红 O

SPM的截面形状解析
Profile analysis by SPM



IG法的衍射光衰减和粒径解析结果
Decay curve of diffraction light and analysis of particle diameter by IG method



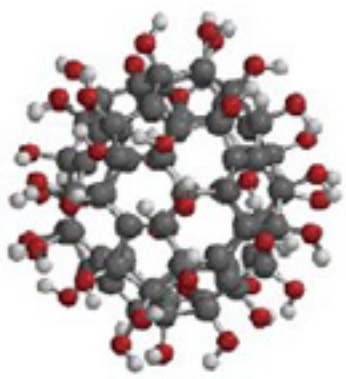
5次测定的平均值±
标准偏差：
1.0nm ± 0.1nm

未修饰的富勒烯C60的尺寸*

直径 0.71nm
Diameter
外径 1.03nm
External diameter

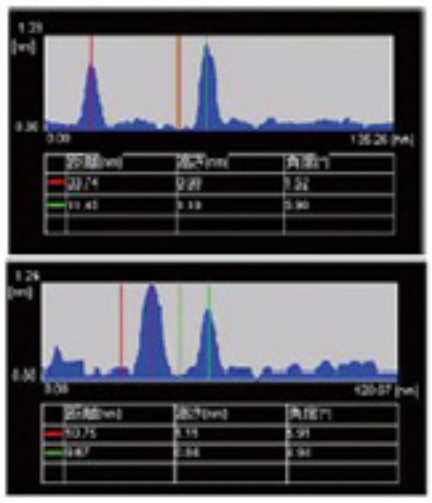
*（参考：[富勒烯C60的化学与物理]
荻原久典、斋藤弥八 著
名古屋大学出版会1997年）

多羟基富勒烯C70／PolyhydroxylatedFullerene C_{70}

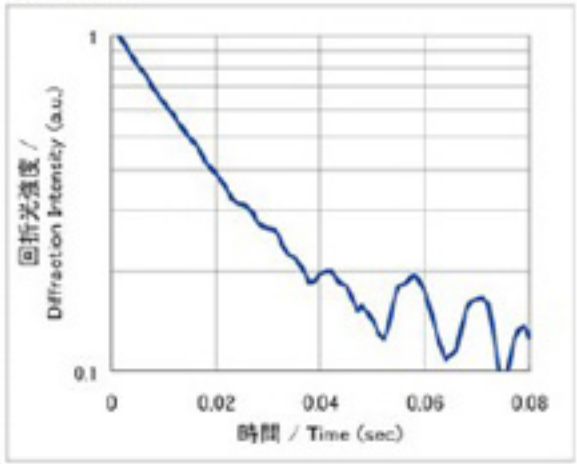


黑 C
白 H
红 O

SPM的截面形状解析
Profile analysis by SPM



IG法的衍射光衰减和粒径解析结果
Decay curve of diffraction light and analysis of particle diameter by IG method



5次测定的平均值±
标准偏差：
1.0nm ± 0.1nm

未修饰的富勒烯C70的尺寸*

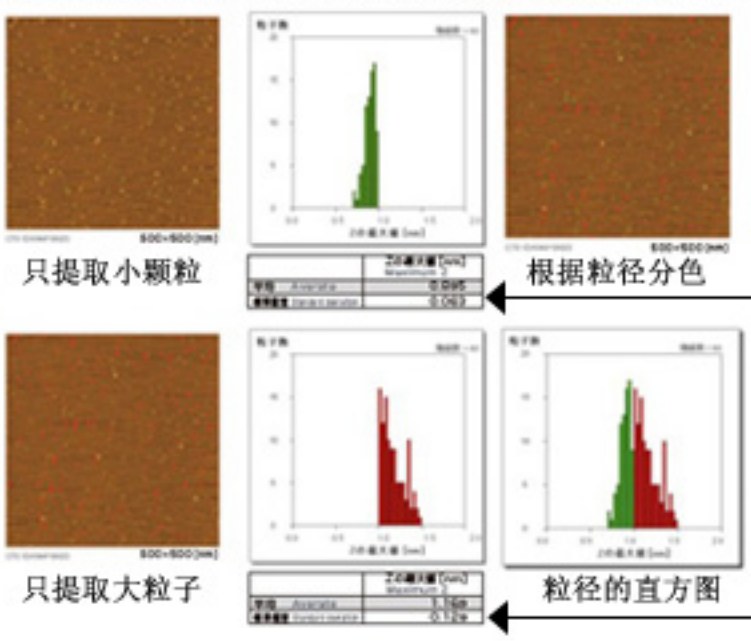
长轴径 0.796nm
Long axis size
短轴径 0.712nm
Short axis size

*（参考：[富勒烯的化学与物理]
荻原久典、斋藤弥八 著
名古屋大学出版会1997年）

多羟基富勒烯C70的颗粒解析

Particle analysis of Polyhydroxylated Fullerene C_{70}

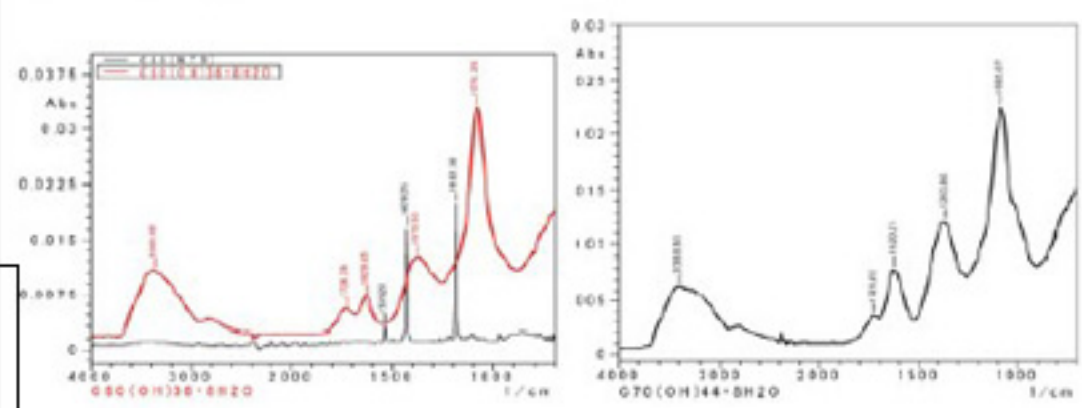
SPM数据的颗粒解析结果。可知测定粒径的分布情况。
This indicates the particle analysis results of SPM data. This shows particle distribution.



通过FTIR评价官能团

Evaluation of functional groups by FTIR

通过FTIR测定多羟基富勒烯C60、 C70的羟基等官能团。
The functional groups (-OH, etc) of Polyhydroxylated Fullerene C_{60},C_{70} are measured by FTIR



	Maximum Z
平均 Averate	0.895
標準偏差 Standard deviation	0.063

	Zの最大値 [nm] Maximum Z
平均 Averate	1.169
標準偏差 Standard deviation	0.129

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